DVMS 1600/800 *Duplex*
Getting Started Guide

GYYR® by SILENT WITNESS®

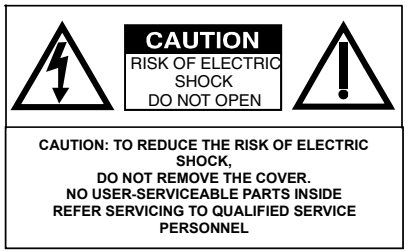
Important safeguards

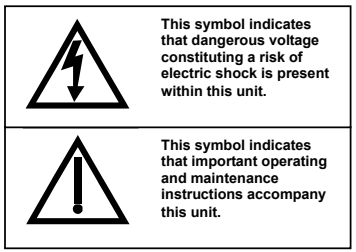
Read instructions

Please read all the safety messages and the contents of this guide carefully before operating the unit.

Safety

Installation and servicing should be done by certified technicians to conform to all local codes and to maintain your warranty.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE THE COVER.
NO USER-SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL


This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
This symbol indicates that important operating and maintenance instructions accompany this unit.

WARNING! The DVMS 1600/800 is intended for indoor use. To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

WARNING! This equipment complies with the limits for Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Warranty and service

Subject to the terms and conditions listed on the Product Warranty Card, during the warranty period Silent Witness will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Silent Witness product, please call Customer Service for assistance or to request a Return Authorization (RA) number.

In the U.S.A. and Canada, call 1.800.893.9513, or call +1.604.574.1523.

For international, call 00.800.2020.8080.

Be sure to have the model number, serial number, and the nature of the problem outlined for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. Items shipped to Silent Witness without a clearly identified Return Authorization (RA) number may be refused.

Regulatory compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Œ

The Œ mark on the product indicates that the system has been tested to, and conforms with, the provisions noted within the 89/336/EEC Electromagnetic Compatibility Directive.

Contents

Introduction - 1

Features - 1

Installation - 2

Before you begin - 2

Initial installation mandatory steps - - - - - - - - - - - - 3

Connect to peripherals - - - - - - - - - - - - - - - - - - 4

Connect remotely - 5

Programming - 5

Enter Program mode - 5

Exit Program mode - 6

User permissions - 6

Change user passwords - 6

Change user names and permission levels - - - - - - - - - - 6

Clock setup - 7

Global system parameters - - - - - - - - - - - - - - - - - 8

Global user preferences - - - - - - - - - - - - - - - - - - - 8

Sequence dwell times for monitor outputs - - - - - - - - - 8

Video text display - 9

Transaction text ports - - - - - - - - - - - - - - - - - - - 9

Remote access -

Pan, tilt, and zoom (PTZ) control - - - - - - - - - - - - -10

Storage drive partitions - - - - - - - - - - - - - - - - - 10

Calculate disk space required - - - - - - - - - - - - - - -10

Calculate how many hours the disk will record - - - - - - -11

Set drive partitions -11

Timelapse recording - - - - - - - - - - - - - - - - - - - 1

Holiday recording times - - - - - - - - - - - - - - - - - -13

Event recording - 3

Image quality, video loss, and system errors - - - - - - - -14

Point of sale interface - - - - - - - - - - - - - - - - - - -14

Motion event recording - - - - - - - - - - - - - - - - - - -15

Text event recording -15

Alarm event recording - - - - - - - - - - - - - - - - - - -16

Stop recording alarm -16

Pre-event recording -16

Reports -17

Create a report -17

Reset to factory defaults - - - - - - - - - - - - - - - - -17

Operation - 18

Start or stop recording - - - - - - - - - - - - - - - - - -19

Live monitoring -20

Control PTZ cameras - - - - - - - - - - - - - - - - - - -20

Search for clips or images - - - - - - - - - - - - - - - -21

Quick report -22

Play back the last images - - - - - - - - - - - - - - - -22

Save (copy) clips to an archive drive - - - - - - - - - -22

Save (copy) images to a VCR - - - - - - - - - - - - - -22

Start sequencing mode - - - - - - - - - - - - - - - - - -23

View current hard drive capacity - - - - - - - - - - - -24

Hot swap the removable drive - - - - - - - - - - - - - -24

Format the archive drive - - - - - - - - - - - - - - - -25

Format the hard drive - - - - - - - - - - - - - - - - - -25

Reboot (restart) the DVMS - - - - - - - - - - - - - - -25

Reset passwords -25

Upgrade the DVMS firmware - - - - - - - - - - - - - -25

Contact information - - - - - - - - - - - - - - 25

About this manual

To make the installation and operation as simple as possible, this Getting Started Guide has the following sections:

Installation	Describes how to connect the DVMS 1600/800 unit to local peripherals and to a computer (PC) for remote operation.
Programming	Covers how to do the initial configuration setup.
Operation	Describes routine daily activities.

For detailed information, please refer to the *DVMS 1600/800 Duplex DVMS Reference Guide* on your CD or downloadable from the Silent Witness web site.

Introduction

The DVMS 1600/800 *Duplex* (referred to as the DVMS 1600/800 throughout this guide) works with a variety of other equipment, including cameras, monitors, alarm inputs and outputs, external storage devices, and ATM/POS interface equipment (text insertion).

Features

Installation

- Up to 16 video channel inputs (the DVMS 800 supports 8)
- 3 video monitor outputs
- Single digital audio channel, both in and out
- Up to 4 text insertion ports for Async ATM/POS interface
- PCMCIA card for network or modem connectivity
- Up to 4 internal IDE or SCSI hard drive (one removable)
- Alarm input/output for external alarm device connectivity
- 100BaseT support

Operation

- Full operation and programming from front panel
- Full remote management with Remote Access Software (RAS)
- Simultaneous recording and playback
- Pan, tilt, and zoom control
- Covert setup

Advanced features

- Up to 60 images per second record speed (DVMS 1600)
  Up to 30 images per second record speed (DVMS 800)
- Real-time operating system
- Multi-zone motion detection
- Upgradable storage and archive options
- High quality image resolution
- Multiple languages

Installation

Before you begin

Unpack everything. Check that the items received match those listed on the order form and packing slip. The DVMS 1600/800 box should include, in addition to this Getting Started Guide:

- ❒ DVMS 1600/800 unit
- ❒ RAS CD-ROM
- ❒ DVMS 1600/800 *Duplex* DVMS Reference Guide
- ❒ Power cord
- ❒ Product Warranty card

If any parts are missing or damaged, contact the dealer you purchased the DVMS 1600/800 from or call Silent Witness Customer Service (see *Warranty and service*).

Initial installation mandatory steps

To ensure maximum system performance, make sure that you complete each step in the proper sequence.

1. Power up the DVMS 1600/800 unit.
2. Set the system to the factory defaults:
   a. Press **MENU** on the DVMS 1600/800 front panel, then log in as User 1.
   b. From the Main Menu, select **System Setup**, then select **Default Settings**.
   c. When the system asks if you wish to proceed, select **OK**.
3. Format the hard drive:

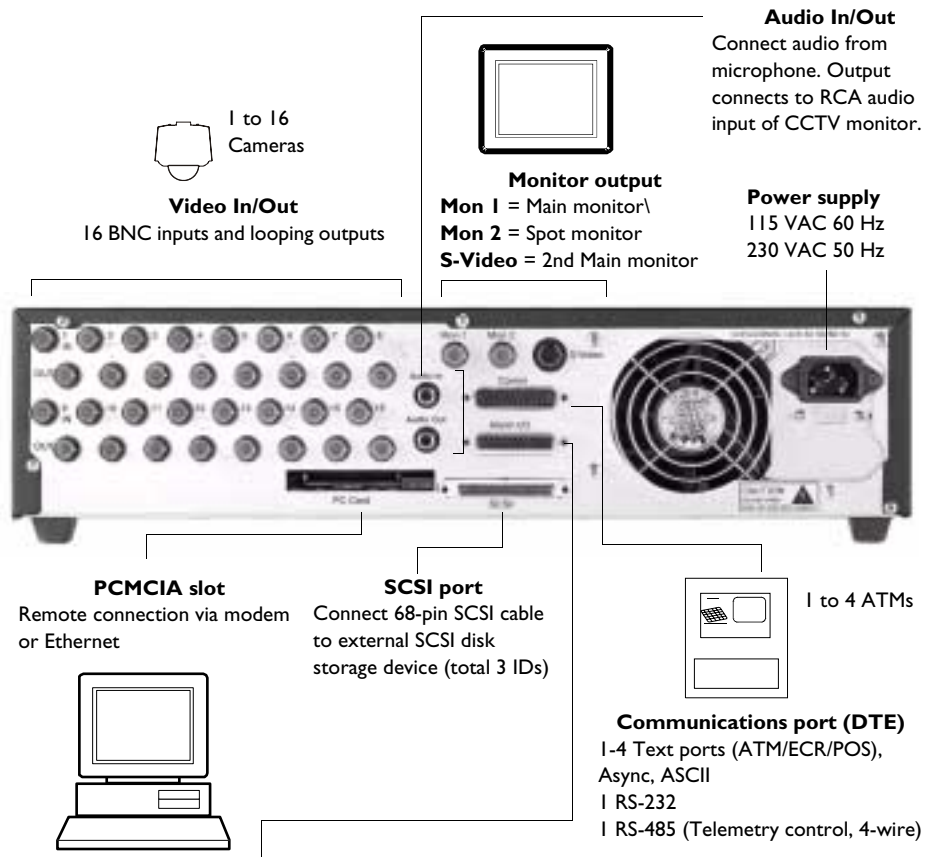
Note Formatting the hard drive will result in permanent loss of all images and other information (for example, text and audio) recorded on the hard drive.

   a. On the Disk Setup screen (**Storage Setup ➤ Disk Setup**), select **Format All**.
   b. When the system asks if you wish to proceed, select **OK**.
4. Connect the DVMS 1600/800 unit to all local peripherals (see *Connect to peripherals*, page *4*).
5. (Optional) Connect the DVMS 1600/800 unit to a PC for remote operation.
6. Configure the DVMS 1600/800 unit for desired operation (see *Programming*, page *5*).
7. Format the hard drive again (see *step 3* above).
8. To start recording, press **REC** on the DVMS front panel, then enter a user name and password when prompted.

Connect to peripherals

1. Connect the DVMS 1600/800 unit to all local peripherals: cameras, monitors, alarm inputs and outputs, external storage, and ATM/POS interface equipment (see *Figure 1*).
2. Connect the DVMS 1600/800 unit to a PC running RAS via a modem, null modem, or Ethernet for remote operation. See *Connect remotely*, page *5* for more information.
3. Apply power to DVMS 1600/800 unit.

Figure 1 Installation


Audio In/Out
Connect audio from microphone. Output connects to RCA audio input of CCTV monitor.
1 to 16 Cameras
Monitor output
Mon 1 = Main monitor\
Mon 2 = Spot monitor
S-Video = 2nd Main monitor
Power supply
115 VAC 60 Hz
230 VAC 50 Hz
Video In/Out
16 BNC inputs and looping outputs
PCMCIA slot
Remote connection via modem or Ethernet
SCSI port
Connect 68-pin SCSI cable to external SCSI disk storage device (total 3 IDs)
1 to 4 ATMs
Communications port (DTE)
1-4 Text ports (ATM/ECR/POS), Async, ASCII
1 RS-232
1 RS-485 (Telemetry control, 4-wire)

Pin	Connector	Pin	Connector	Pin	Connector
1	Alarm In 1	9	Alarm In 14	17	Alarm In 7
2	Alarm In 3	10	Alarm In 16	18	Ground
3	Ground	11	Reserved	19	Alarm In 10
4	Alarm In 6	12	Alarm Out 1	20	Alarm In 12
5	Alarm In 8	13	Alarm Out 2	21	Alarm In 13
6	Alarm In 9	14	Alarm In 2	22	Alarm In 15
7	Alarm In 11	15	Alarm In 4	23	+5 VDC
8	Ground	16	Alarm In 5	24	Alarm Out 3
				25	Alarm Out 4

Note For the DVMS 800, pins 6, 7, 9, 10, 19, 20, 21, and 22 are reserved (not used).

Pin	Connector	Pin	Connector
1	Ground	14	ATM 1 RX
2	232 DTR	15	ATM 1 TX
3	232 RTS	16	ATM 2 RX
4	Ground	17	ATM 2 TX
5	232 TX	18	ATM 3 RX
6	232 DSR	19	ATM 3 TX
7	Ground	20	ATM 4 RX
8	232 CTS	21	ATM 4 TX
9	232 DCD	22	485 RX+
10	Ground	23	485 RX-
11	232 RI	24	485 TX+
12	232 RX	25	485 TX-
13	Ground		

Connect remotely

Local installation

1. Validate the proper configuration to accept the approved modem or network card that will be used (**MENU ➤ System Setup ➤ Remote Access ➤ Method** field).
2. Power down the DVMS 1600/800 unit.
3. Insert either an approved modem or network card into the PCMCIA slot of the DVMS 1600/800 unit (see *Figure 1*).
4. Power up the DVMS 1600/800 unit.

Remote installation

1. Enable the DVMS 1600/800 unit for remote access (**MENU ➤ System Setup ➤ Remote Access ➤ Method**).
2. Enable remote access for at least one user name (**MENU ➤ User Permissions**).
3. Install RAS software.
4. Connect to the DVMS 1600/800 unit using either an Ethernet connection, dial-up modem connection, or a null modem connection.

Refer to the *DVMS 1600/800 Duplex DVMS Reference Guide* for complete procedures.

Programming

After your DVMS 1600/800 unit is connected to all the peripheral equipment, you need to program your system. The following sections describe how to complete the initial system setup tasks.

Note The DVMS 1600/800 screens in this Getting Started Guide show the factory default settings.

Navigating through the menus

Front panel control button	Function
▲ (MENU)	• Move up through menus OR exit Program mode from the Main Menu. • Increment to a larger value OR scroll through letters in a text box.
▼ (FUNCTION)	• Move down through menus OR decrement to a smaller value. • Scroll through letters in a text box.
◀ (RECORD)	• Move left through menus. • At a menu selection, cycles value forward. • At a sub-menu title, enters sub-menu.
▶ (PLAY)	• Move right through the menus. • At a menu selection, cycles value backward. • Move to different letters in a text box.
Enter	• Select a function for menu change. • Confirm a field change. • Leave Program mode.
Camera 1	Insert a letter.
Camera 2	Delete a letter.
Camera 3	Open a Text Entry screen.
jog wheel	• Enter values. • Scroll through letters when changing text.

Enter Program mode

1. Press **MENU**.

Note If the DVMS 1600/800 unit is recording when you enter Program mode, you are warned that recording will stop.

If you previously disabled all user names, you are not prompted for a password and you are not warned that recording is stopping.

2. Select a user name when prompted. Press a Camera button (for example, Camera 1 is User 1) to select a user name.
3. Use the Camera buttons in sequence to enter your password. On first log in, use the default password **1234**.

   Before you set up your system, Silent Witness recommends that you change the default passwords and establish your initial user identification and permissions levels (see *Change user names and permission levels*, page 6).
4. Press **Enter**. The Main Menu displays. The Setup menu is the portal to all the configuration screens.

Note All the editable screens have an Accept button that you **must** select to confirm your screen changes. The new settings take effect when you exit Program mode.

Exit Program mode

Highlight **Exit** on the Main Menu screen, then press **Enter**. The system automatically exits Program mode and starts recording again after five minutes of inactivity.

User permissions

There are two password levels: Administrator and User. Administrator level allows access to all system operation and configuration levels. You must enable at least one user with Administrator level.

User level access is limited to operational aspects of the system. You can configure up to 16 system users (8 for the DVMS 800) with their own password and user access levels.

Silent Witness recommends that you change the default password for **each** user name.

Change user passwords

To change a user password:

1. Go to the Change Password screen (**MENU ➤ Change Password**).
2. Press one of the Camera buttons to select a user name (Camera 1 is User 1).
3. Enter a new password using the Camera buttons; then press **Enter**.
4. Confirm your new password when prompted.

Note You can also enable or disable the password function globally (for all users) from the User Preferences screen (**MENU ➤ System Setup ➤ User Preferences**).

Change user names and permission levels

To set or change user names and permission levels:

1. Go to the User Permissions screen (**MENU ➤ Change Password**).
2. Select a user name and enter the password.
3. When prompted, confirm your new password by entering your user name and new password again.

   The User Permissions screen displays.

On the User Permissions screen, you can:

- Change the user name. Press ▲ to move to the user name field, then press **Enter**. Use the control buttons or the jog wheel to select the desired character. Press ▶ to move to the next character and change it. User names can be two to six characters, not including the user number. Press **Enter** to accept the new user name.

  Camera 1 button adds a character. Camera 2 button deletes a character.

- Change permission levels.
  - Enable user ID. If this field is disabled, that user has no access to the DVMS 1600/800 unit.
  - Enable administrative access. If this field is disabled, that user cannot use any of the functions accessed with the MENU button. **At least one user must have administrative access enabled.**
  - Allow remote access. If this field is disabled, that user cannot access the DVMS 1600/800 unit remotely.

Clock setup

To set the clock, go to the Clock Setup screen (**MENU ➤ Clock Setup**).

Date and time: Current system date and time.

Clock format: Set for your geographic area.

Daylight Saving Time: Enable if appropriate for your geographic area.

Text Insertion Synchronization: Enable ONLY if you wish the DVMS 1600/800 unit set to the date and time used by one externally connected device.

Select **SET** to confirm your changes. The system clock changes when you select **Accept** and exit the Clock Setup screen.

Global system parameters

To set up preferences that apply to the whole system and configure basic hardware, go to the System Setup menu (**MENU ➤ System Setup**).

Global user preferences

Configure global user preferences on the User Preferences screen (**MENU ➤ System Setup ➤ User Preferences**).

Language: Choose to have all DVMS screens appear in English, French, Italian, Spanish, or Dutch.

Autobreak: Break timelapse recording into 15 minute clips.

Timelapse modes:
Simple: Typically set for 24 hour, 7 day/week recording. You can also specify a business schedule (example: Monday to Friday, 8 hours) to record timelapse and then only record events (motion, alarm, text) in the alternate times.

Advanced: Program both normal (day) and alternate (night) recording.

Remote Bandwidth Throttle:
Regulate network bandwidth usage (1 to 250 KBps).
MAX = maximum bandwidth.
0 = disables the throttle mechanism.

For more information on setting timelapse recording, see *Timelapse recording*, page *11*.

Sequence dwell times for monitor outputs

Set the sequencing operation on the Display Setup menu screens (**MENU ➤ System Setup ➤ Display Setup**). From the Display Setup menu, select **Main Monitor** to access the Main Monitor screen.

Main Monitor: Enable/disable up to 16 connected cameras to display full screen, 2 x 2, 3 x 3, or 4 x 4.

Dwell Time: The time the video displays on one camera before moving to the next camera in sequence mode.

Accept your changes to go back to the Display Setup menu.

Select **Spot Monitor** to access the Spot Monitor screen.

Configure the cameras you wish to appear on the Spot Monitor sequence.

Accept your changes to go back to the Display Setup menu.

Select **Covert Setup** to access the Covert Setup screen.

Covert Setup
Covert cameras will be disabled on the main monitor and will not appear in the spot monitor sequence.
Cameras
Accept
Cancel

Select the cameras that you wish to disable from the main monitor and spot monitor sequence.

For example, when you select camera 1, Disabled Camera 1 displays when the Camera 1 button is pressed on the DVMS 1600/800 front panel. Camera 1 will not show as part of the spot monitor sequence.

Full screen display for individual cameras = Press each camera button.

Full screen sequence mode: Press **FUNCTION** and **Camera 1** button together.

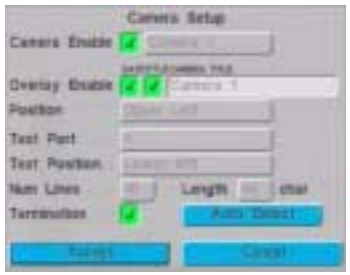
Quad (2 x 2) mode: Press **FUNCTION** and **Camera 4**, then press again to start Quad sequencing.

Nine (3 x 3) mode: Press **FUNCTION** and **Camera 9**, then press again to start Nine page sequencing.

Hex (4 x 4) mode: Press **FUNCTION** and **Camera 16**.

Video text display

Set how the transaction text is displayed on each camera, including video termination, on the Camera Setup screen (**MENU ➤ System Setup ➤ Video Inputs**). The Camera Setup screen displays.



Cash Reg.#: Identifies the cash register to which the camera is mapped. For more information, see ***Point of sale interface*, page *14***.

Termination: When enabled, DVMS 1600/800 unit automatically detects whether video is present and updates the switcher setup when cameras are present.

To change the text that displays on the video clips:

1. Go to the Camera Title field.
2. Activate the box by pressing **Enter**, then press ▼ or ▲ or the jog wheel to change the value. Camera 1 button inserts or appends a letter. Camera 2 button deletes a letter.
3. Press **Enter** to confirm your changes.
4. In the Position field, select where you wish the title to display on the video clip.
5. In the Text Position field, select where you wish the time and date to appear on the video clip.
6. When you have finished making your selections, select **Accept** to confirm your changes and exit this screen.

Transaction text ports

Enter the technical data associated with the input device for each connected port (up to 4) on the Text Ports screen (**MENU ➤ System Setup ➤ Text Ports**).

Text port: You must enable each connected port before the system accepts information from that port.

Remote access

Enable remote access if you wish to configure or control the DVMS 1600/800 unit remotely through a modem or network connection. Go to the Remote Access screen (**MENU ➤ System Setup ➤ Remote Access**).

IP Address: You must obtain a unique, fixed IP address from your Network Administrator or Internet Service Provider that is different from any PC connected to your network.

To select a 10/100BaseT network interface:

1. Select IEEE 802.3 (Ethernet) in the Method field.
2. Power down the DVMS 1600/800 unit.
3. Plug in the appropriate network module (specified above) into the rear PCMCIA port.
4. Power up the DVMS 1600/800 unit.

Pan, tilt, and zoom (PTZ) control

To set up PTZ control for Silent Witness Vortex and Pelco® PTZ cameras that use the Pelco D protocol:

1. Go to the Remote Access screen (**MENU ➤ System Setup ➤ Remote Access**).
2. In the RS-485 Setup area, set the DVMS Address (1 to 249).
3. Set **DVMS is Master** when the DVMS controls the dome or **DVMS is Slave** when an external controller (Quarterback) controls the dome.
4. In the Baud Rate field, select a baud rate that is identical to the operational baud rate of the PTZ camera.
5. In the Dome Address field:
   a. Select a camera.
   b. Set the dome address.
   c. Select the desired protocol (Vortex or Pelco).
6. Repeat *step 5* for each PTZ camera.

Storage drive partitions

You can connect up to seven storage devices to the DVMS 1600/800 unit. These can include:

- Up to four internal hard drives (IDE or SCSI), one of which can be removable
- An optional storage device (CD-R/W or DVD drive, SCSI drive and tray) in combination with up to three external devices (SCSI or SCSI RAID)

Note If you add additional drives or upgrade system drives after the initial system configuration, you must reformat the storage system. **This results in permanent, irreversible data (stored video) loss.**

To avoid reformatting the system, Silent Witness recommends that you add an optional archive drive.

For detailed information on installing and configuring additional system storage drives, refer to the *DVMS 1600/800 Duplex Internal Drive Upgrade Guide*.

Calculate disk space required

To determine how much disk space is required for storing timelapse and event data, use the following two formulas and add the results together to get a total amount of disk space needed.

For timelapse:

$$\frac{\text{Total hours x Record rate (fps)}}{\text{Image quality (compression)}} \times 1.26 = \text{Timelapse disk space (GB)}$$

In this example:

$$\frac{168 \text{ hrs} \times 5 \text{ fps}}{20} \times 1.26 = 52.92 \text{ (approximately 53 GB)}$$

For events:

Image size x Record rate (fps) x number of seconds = Event disk space (bytes)
Event space x no. of events per day x no. of days = Total events disk space

In this example:

17,500* x 3 fps x 5 secs = 262,500 bytes

262,500 x 500 x 7 = 918,750,000 (or approximately 1 GB)

* one field is approximately 350 Kbps. Therefore, the stored image size is field/compression = 350 K/20 = 17,500.

For total timelapse and events:

Timelapse disk space + total events disk space = Total disk space

In this example:

53 GB + 1 GB = approximately 54 GB for one week (168 hours) of timelapse and events recording.

Therefore, in this example, one week of recording timelapse and events requires 54 GB hard disk storage space.

For more information on calculating storage space, visit our web site at http://www.silentwitness.com/products.

Calculate how many hours the disk will record

To determine how long disk(s) will last, use the following formula:

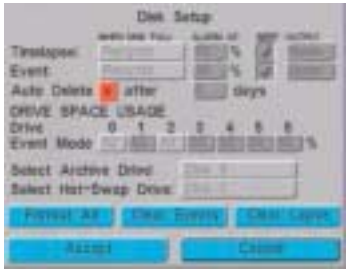
$$\frac{\text{Disk size x Image quality (compression) / Record rate (fps)}}{1.26} = \text{hours}$$

For example:

$$\frac{(100\ \text{GB} \times 20)\ /5}{1.26} = 317\ \text{hours (or approximately 13 days)}$$

Set drive partitions

To set storage drive partitions, go to the Disk Setup screen (**MENU ➤ Storage Setup ➤ Disk Setup**).



Event Mode: Allocate a percentage of drive capacity for each drive. The balance of the capacity is allocated to timelapse.

Note Set the drive capacity to 100% if you only use Event mode.

Select Archive Drive: Allocate one installed drive as an archive drive.

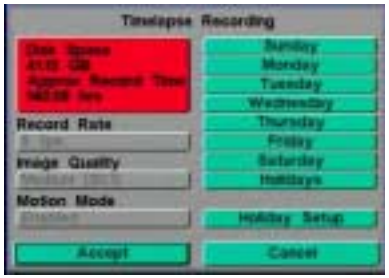
When Disk Full:
Stop = Stop recording.
Recycle = Start at the beginning again, overwriting oldest images.

Timelapse recording

After you select the desired Timelapse mode (simple or advanced) on the User Preferences screen, go to the Timelapse Recording screen (**MENU ➤ Timelapse Recording**) to set:

- Record rate (fps) and compression setting
- Recording times for each day of the week
- Recording times for up to ten holidays

Note If you use your DVMS 1600/800 unit as a combined timelapse/event recorder, the event recording settings override the timelapse settings when an event is detected.



Record Rate: Low rate = increased storage space and less video detail.

Note The total number of fps recorded by all 16 cameras cannot add up to more than 60 fps for NTSC (50 for PAL). For the DVMS 800, the total fps for all 8 cameras cannot exceed 30 fps for NTSC (25 for PAL).

Image Quality: A higher compression ratio effectively increases storage time. Image quality reduces as the compression increases.

Motion mode in Simple mode

To set the DVMS 1600/800 unit to record a timelapse clip **only** when there is motion in the defined cameras during the times set in the timelapse calendar:

1. On the User Preferences screen, set the Timelapse field to **Simple Setup**.
2. On the Timelapse Recording screen, set the Motion Mode field to **Enabled**.

3. On the Recording screen for each day, set the desired recording times.

Example showing 8:00 to 17:00 recording schedule for cameras 1 to 16.

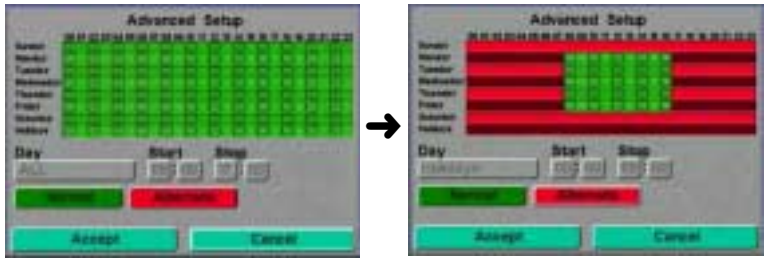
Example showing 24 hour recording schedule for cameras 1-12 and 8:00 to 17:00 recording schedule for cameras 13 to 16.

Advanced Timelapse mode

To program both normal (day) and alternate (night) recording schedules:

1. On the User Preferences screen, set the Timelapse field to **Advanced Setup**.
2. On the Timelapse Recording screen, click **Advanced Setup**.
3. Set the desired days and hours for normal and alternate operating parameters (camera rates, image quality, motion mode).

Monday to Friday, 8:00 to 17:00, Closed after 17:00, weekends, and holidays.



4. On the Timelapse Recording screen, set which cameras are to record for each day of the week during normal business hours.

5. You can program the system to use a global record rate or set a record rate for each camera. On the Timelapse Recording screen, click **Normal Setup**.

Note The global rate is common for timelapse VCR-type recording. Typically, 24-hour timelapse mode is equivalent to 5 fps and high density (real-time) timelapse recording is about 15 fps. Disabling the global rate record rate allows you to set the rate (fps) for each camera.

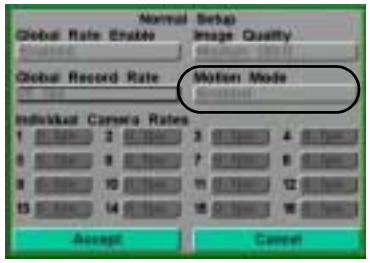
If you exceed the total number of fps (DVMS 1600: 60 for NTSC, 50 for PAL; DVMS 800: 30 for NTSC, 25 for PAL), you will see a warning message when you select Accept. If this happens, reduce the individual record rates so the accumulated total is 60/50 (30/25) fps or less.

Note Only those cameras in the record sequence are available for remote live viewing via RAS. For example, if you only enable cameras 1-12 in the record sequence, RAS cannot view cameras 13-16.

Motion mode in Advanced mode

Motion mode uses the Motion Event Setup to record timelapse video **only** when there is motion in the field of view of the defined camera(s). The motion must meet the detection criteria for size, sensitivity, and direction.

You typically use this feature to record motion during the evening and on weekends and store the information in the timelapse storage section, instead of in the event section.



Note Turn off all cameras to record motion mode (timelapse partition) only.

Turn on cameras to record motion clips (event partition).

Holiday recording times

Set recording times for up to 10 holiday dates on the Holiday Setup screen (**MENU ➤ Timelapse Recording ➤ Holiday Setup**).

Event recording

The DVMS 1600/800 unit can detect three event types (motion detection, text inputs, and alarm inputs). When the disk is full (that is, the When Disk Full field on the Disk Setup screen is set to **Stop** —see *Set drive partitions*), a system error occurs, or a video signal is lost, the operator can be alerted. Use the Event Recording menu (**MENU ➤ Event Recording**) to specify how the system responds to these events.

Note All event types must be enabled prior to use. In the Reset Type field of the Motion Event Setup screen or the Text Event Setup screen, program the event to timed or automatic mode.

When you set both timelapse and event recording settings, the event settings override the timelapse settings when an event is detected.

Image quality, video loss, and system errors

To set conditions that are common to all event recording (motion, text, alarm), go to the General Setup screen (**MENU ➤ Event Recording ➤ General Setup**).

Enable Video Loss: System takes action when a lost video signal is detected from an enabled camera.

Output: DVMS 1600/800 unit sends a signal to an alarm output when it detects video loss or system error.

Record Indicator: See *Stop recording alarm*, page *16*.

Image Quality: The higher the compression rate, the longer you can record video before filling your storage disk(s). Image quality reduces as the compression increases.

Point of sale interface

The point of sale interface requires connection to a cash register server that has a single RS232 ASCII text output. This output must have real time generated serial data that contains the transaction of multiple (currently up to four) cash registers. The physical interface between the cash register server and the DVMS 1600/800 unit is via the Text 1 input port. To select a cash register type:

1. On the General Setup screen, enable the Cash Register field.
2. In the Type field, select the cash register type.

   When Cash Register is enabled, the DVMS 1600/800 unit looks for a cash register identification header using data from the cash register server on the Text 1 port. The appropriate camera is then mapped to the incoming text. All other text ports (2 to 4) are disabled.

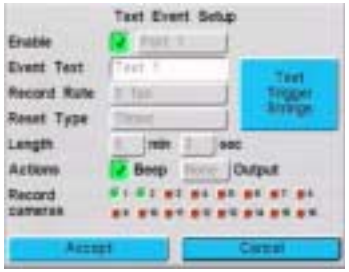
   When the Cash Register field is disabled, all DVMS text ports are operational for normal ASCII text input.

3. Map the camera input to the appropriate input port:

   a. On the Camera Setup screen (**MENU ➤ System Setup ➤ Video Inputs**), select the desired camera(s) in the Camera Enable field (see page 9).

   b. Select the Cash Register number (1 to 4). This identifies the cash register to which the camera is mapped.

4. Go to the Text Event Setup screen (**MENU ➤ Event Recording ➤ Text Events**).

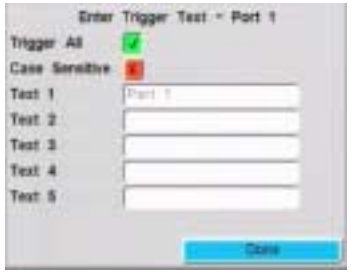


5. In the Length field, set a time duration beyond the maximum duration of a typical transaction. Typically this is the time between the cash register opening and closing (for example, nine minutes).

   Event recording terminates earlier than the time window specified after all the transaction data is received at text port 1.

   If the end of the transaction data is not received (for example, a cash register drawer is left open), recording stops after the set time duration has elapsed.

6. Select **Text Trigger Strings.** The Enter Text Trigger Text - Port 1 screen appears.



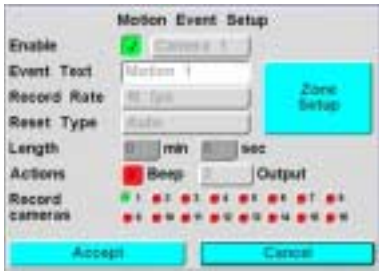
7. Ensure that Trigger All is enabled.

Note Do not enter specific text strings into the Text 1 to Text 5 fields as the DVMS 1600/800 unit will consider this redundant.

Motion event recording

To enable motion event triggers for each installed camera, go the Motion Event Setup screen (**MENU ➤ Event Recording ➤ Motion Events**).

1. Specify the record rate, in fields per second, that should be recorded by each camera. When two or more cameras are set to Motion, the record rate is split between them.



Reset Type: Auto = System automatically resets immediately after the event.
Length: When Reset Type field is set to Timed, you can configure the length of time it takes to reset.

2. Select **Zone Setup** to assign screen areas for up to four independent motion zones per camera.
3. On the Zone Layout screen:
   a. Use the DVMS front panel buttons (◀, ▶, ▲, ▼) to move to the first square you want to assign to zone 1. Press the **Camera 1 button** to assign that square to zone 1. Move to any additional squares you want to assign to zone 1 and press the Camera 1 button. Press **Enter** when you complete the motion zone area.
   b. Repeat for zones 2, 3, and 4. Each zone may have as many squares included as you wish.

      To fill the whole screen with the same zone assignment, press and hold the Camera number button for that zone, AND press the **Camera 16** button.

      The Camera 5 button erases programmed zones.
   c. Select **Accept** to activate your changes and exit this screen.
4. Go to the Motion Event Calendar screen (**Event Recording ➤ Motion Event Calendar**) to schedule when motion event recording is active.

Note Testing the effectiveness of the motion triggers is key for optimal disk utilization.

Text event recording

1. Use the Text Event Setup screen (**MENU ➤ Event Recording ➤ Text Events**) to configure transaction text events on a per-port basis.
2. Go to the Text Event Calendar screen (**Event Recording ➤ Text Event Calendar**) to schedule when text event recording is active.

Alarm event recording

1. Use the Alarm Events Setup screen (**MENU ➤ Event Recording ➤ Alarm Events**) to indicate how the system reacts to alarm events for the hardwired alarm inputs (1-16) on the back of the DVMS 1600/800 unit.
2. Go to the Alarm Event Calendar screen (**Event Recording ➤ Alarm Event Calendar**) to schedule when alarm event recording is active.

Stop recording alarm

Provide TTL output at an alarm output that is Hi when the DVMS 1600/800 unit is recording and goes LO when the DVMS is not recording any video. To activate the record indicator:

1. Go to the General Setup screen (**MENU ➤ Event Recording ➤ General Setup**).

2. In the Record Indicator field, select **None**, **1**, **2**, **3**, or **4**.

Pre-event recording

To record and save data (motion, text, alarm) immediately prior to an event from selected cameras, enable this option on the Pre-event Setup screen (**MENU ➤ Event Recording ➤ Pre-event Setup**).

Enable: When enabled, if the DVMS 1600/800 unit detects an event (alarm, text, or motion), the video recorded before the event—as determined by the Pre-Event setup—is not over-written but is saved along with the video recorded during the event. After the event is reset, the DVMS 1600/800 unit goes back to recording video data in a loop.

Length: The length of time the system records data in a loop.

Record Rate: Low rate = increased storage space and less video detail.

Image Quality: A higher compression ratio effectively increases storage time. Image quality reduces as the compression ratio increases.

Note The total number of fps recorded by all 16 cameras cannot add up to more than 60 fps for NTSC (50 fps for PAL). For the DVMS 800, the total number of fps recorded by all 8 cameras cannot exceed 30 fps for NTSC (25 fps for PAL).

Reports

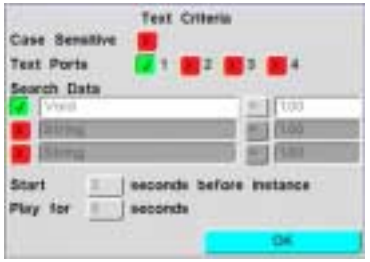
Use the Reports menu (**MENU ➤ Reports**) to:

- Create text or event reports
- Run reports
- Automatically schedule reports

Create a report

You can specify the search criteria for running reports based on timelapse and event clips.

1. On the Create New Report screen, enter a name for the report in the Title field.
2. In the What kind of report field, enable either **Text** or **Event.**
3. Select **Report Criteria Setup.** Depending on your choice, one of the following screens appears.

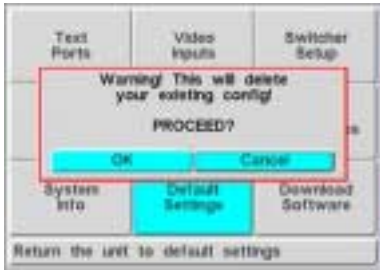


Search Data examples:
- instances of a certain dollar amount
- all transactions over $100.00 between January 1-30

4. After you set the report criteria, select **OK** to return to the Create New Report screen.
5. In the When to search field, select the desired start and end time parameters for the system to search.
6. Select **Accept**, then **Enter** to return to the Create New Report screen.
7. Select **Run a Report**. The report you created appears on the Select Reports drop-down list.

Reset to factory defaults

If you need to reset your system configuration settings back to the factory default settings (for example, if operation becomes erratic) go to the System Setup screen (**MENU ➤ System Setup**) and select **Default Settings**.



Operation

This section describes how to perform the following routine operations:

- Start or stop recording
- Monitor video live
- Operate PTZ cameras
- Search for clips or images
- Use the quick report feature
- Play back the last recorded clip
- Save clips to an archive drive
- Start sequencing mode
- View current hard drive capacity status
- Hot swap the removable drive
- Format the archive drive
- Restart (reboot) the DVMS 1600//800 unit

Note These operations can also be done remotely using Remote Access Software (RAS) on a PC connected to the DVMS 1600/800 unit.

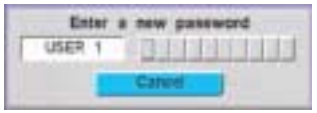
The following table describes the front panel button functions as they apply to operating activities.

Front panel operations

Control button	Description
Cam 1 to 16	Select a specific camera to be displayed on the main output monitor. Operating these buttons overrides the programmed operation of the main monitor.
REC	Enable and disable (toggle) local recording to the hard drive.
PLAY	Initiates local playback of latest video information from the hard drive.
FUNCTION	Activate secondary functions of the keyboard buttons, including: • Accessing multi-screen display modes • Sequencing • Searching • Generating reports without entering Program mode • Removing hot-swappable IDE/SCSI drive
+ Camera 1	Full screen camera sequence on main monitor
+ Camera 2	Activate the hot swap function. This allows you to remove the hot-swappable IDE or SCSI drive without having to power down the DVMS 1600/800 unit.
+ Camera 4	Display 2 x 2 images on main monitor. Activating again selects next group (that is, 5 to 8).
+ Camera 9	Display 3 x 3 images on main monitor. Activating again selects next group (that is, 10 to 15).
+ Camera 16	• Live mode: Displays 4 x 4 images on main monitor. • Program mode: To set up motion detection zones, press the **zone number** (1 to 4), then **FUNCTION** + **Camera 16** to fill/remove the zone number selected (1 to 4) in the entire screen.
+ PLAY	Activate the Search menu.

Control button	Description (Cont'd)
MENU	Activate report execution without having to enter the Setup menus. During Playback mode, MENU activates archiving of the clip displaying. Activates the first level menus on the DVMS 1600/800 unit, including the following DVMS configuration options: • Clock setup • Timelapse recording • Event recording • Reports • System operational log • Passwords • Overall system and storage setup
Jog/Shuttle	Enter values during Program mode or to provide video data review during Playback mode. During Playback mode, the outer shuttle ring is used for variable speed playback in either forward or reverse. The inner jog wheel allows image-by-image playback in forward or reverse.
Enter	Select a function for menu change or operation. During playback, it can be used to terminate the Playback function.
▲ (MENU)	Navigate up through the menus or increment to a larger value.
▼ (FUNCTION)	Navigate down through the menus or decrement to a smaller value.
◀ (RECORD)	Navigate left through the menus or select the previous clip during Playback.
▶ (PLAY)	Navigate right through the menus or select the next clip during a Playback.

Start or stop recording



Start recording

1. Press **REC** (◀).
2. Select a User ID (Camera buttons 1-16). Default USER ID is 1.
3. Enter your password (Camera buttons 1-4 only).
4. Press **Enter**. Default password is 1234.

Stop recording

1. Press **REC** (◀).
2. Enter your User ID and password.
3. Press **Enter**.

Note The DVMS 1600/800 unit is a duplex recorder. You can play back images without stopping recording. However, recording stops if you enter the menu structure (Program mode) to change system setup options.

Live monitoring

When your DVMS 1600/800 unit is connected to one or two video monitors and an amplified speaker, the signals from your cameras and microphone can be monitored live.

For the main monitor, set how the images display on the screen:

Press FUNCTION +	to select input from …	to display…
Camera 1	A single camera	Full screen view
Camera 4	Any four cameras	2 x 2
Camera 9	Any nine cameras	3 x 3
Camera 16	All 16 cameras	4 x 4

In sequential mode, all active cameras are shown in numerical order. Each camera has an independently set dwell time of 0 to 60 seconds (see *Sequence dwell times for monitor outputs*, page *8*).

Control PTZ cameras

1. Select and display any one of your cameras that is PTZ capable (an asterisk appears next to the camera number on the video monitor).
2. Press **FUNCTION** + **Camera 3** to display the PTZ control menu on the video monitor.

Saved preset

Camera icon = Enter manual camera control.

Menu = Access camera menus.

Saved pattern

Press the Camera icon to enter manual control of a PTZ camera or to return to the PTZ camera menu. To control a PTZ camera, move the camera using the arrow keys:

- Zoom in = Turn outer jog wheel clockwise.
- Zoom out = Turn outer jog wheel counterclockwise.
- Turbo pan = Press and hold an **arrow button** + **Enter** at the same time.

Press **Menu** to access the Camera Menu. In Camera Menu you can use:

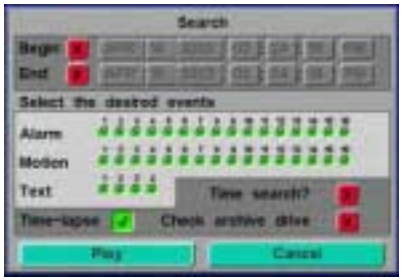
- The Camera 8 button as **Enter**
- The ▲ and ▼ control buttons to move through the menu options

3. Use the following table to set a new preset camera view (Preset) or to store a new defined camera pattern (Pattern).

Preset	Pattern
Select **Preset** to set or recall (1 to 100) specific views.	Select **Pattern** to store or execute (1 to 3) viewing patterns.
To set a new preset camera view: 1. Press the **Camera icon** to enter manual camera control. 2. Define a view using the control buttons. 3. Press the **Camera icon** to exit manual camera control. 4. Select **Preset**, then a number from **1** to **100**, then select **Set**. To view, select the **preset number**, then press **Recall**.	To store a new defined camera pattern: 1. Select **Pattern** mode. 2. Select a pattern from **1** to **3**. 3. Select **Store** to enter manual PTZ mode. The message Programming pattern displays on the monitor. 4. Move the camera through the desired patterns. 5. Press the **Camera icon** to return to the PTZ Menu. This stores the pattern you have just defined. To play back, select the **pattern number**, then press **Execute**.

Search for clips or images

1. Press **FUNCTION** + **PLAY**, then enter your user name and password when prompted.
2. On the Search screen, enter begin and end dates to search for images (events and/or timelapse) between those dates.



Normally used to find particular events during a period of time.

Note The DVMS 1600/800 unit has an Autobreak option that automatically breaks timelapse into 15-minute clips. This makes searching easier, as a search of 1 to 2 hours returns 4 to 8 timelapse clips.

3. To refine your search, select the desired events and the particular camera(s) you wish to search.
4. Select **PLAY** to begin the search.

   To jump to a particular date and time, enable the **Time search** option and then enter the begin date and time desired. Select **PLAY** and the images for that period, if available, start to play back.

You can also create a report and specify search criteria.

Search criteria:

- A particular type of clip (events, timelapse) created for a certain time period
- Text type information (transactions, withdrawals, voids, over-rings)
- A period of time

Quick report

To find information quickly without stopping recording, bypass the Main menu to run a report:

1. Press **FUNCTION** + **MENU** on the front panel.
2. Enter a user name and password when prompted. The message Do you want to run a quick report or run an existing report? displays.
3. Select **Quick** to go to the Edit a Report screen.
4. Select **Text** or **Event**, then **Report Criteria Setup** to go to the Report Criteria screen.
5. Enter your desired search criteria.
6. **Accept** your changes to display the desired video clips.
7. Tag the desired video clips (highlight video clip and press **Camera 1**), then press **Play** to view them.

Play back the last images

To immediately play back the most recent clip recorded:

1. Press **PLAY** (▶).
2. Enter your User ID and password. The clip begins to play back.

Note This feature assumes user preferences/clip order is set to reverse chronological order.

This feature plays back the first clip in the review clips list. The clip can be the most current event or it could be the last timelapse clip started up to 15 minutes ago or, if autobreak is disabled, the timelapse clip could have started a week ago.

If not in reverse order, pressing **PLAY** plays back the oldest clip available.

Save (copy) clips to an archive drive

After you have configured an archive drive (see *Set drive partitions*, page *11*), save downloaded images to an archive drive:

1. Find the clip(s) you wish to copy:
   a. Press **FUNCTION**, then press **PLAY**. The Search screen displays.
   b. Press **PLAY** on the screen. The Review Clips screen displays.
   c. Select the clips you wish to copy. Move to the desired clip, then press **Camera 1**. Pressing Camera 1 again de-selects the clip.

      Press ▼ or ▲ to move to the next clip and press **Camera 1**. Press the Camera 2 button to select all the clips.
2. Archive the clip(s). Press the **Camera** 3 button to archive the selected clips. An Archive Status screen displays the progress.

   To cancel the archive operation, press any button.

You can also save images to a removable device in one of three ways:

- During playback of a clip, press **FUNCTION** and **MENU** to activate archiving of the clip currently being displayed.
- Create a report, set up the Run Report to automatically copy to disk, select the report created, and set the time to archive.
- Use the RAS software to save the clip to a computer disk. The saved clip (if not too large) can then be burned onto a CD-ROM, copied to a Zip disk, or e-mailed.

Save (copy) images to a VCR

To save video to a VCR:

1. Connect the monitor output of the DVMS to the video input on the VCR.
2. Connect the video output of the VCR to the monitor.
3. Use the search options to find the images you want to save.
4. Press **Record** on the VCR.

Start sequencing mode

There are three monitor outputs on the DVMS 1600/800 unit:

- Two main monitor outputs (composite and S-Video). You can use both these output options at the same time. They work the same way, except that the S-Video has a sharper image and text output.

  Display options are:

  - Full screen individual cameras—press each Camera button (**1** – **16**).
  - Full screen sequence mode—press **FUNCTION**, then **Camera 1**.
  - Quad (2 x 2) mode—press **FUNCTION**, then **Camera 4**.
  - Nine (3 x 3) mode—press **FUNCTION**, then **Camera 9**.
  - Hex (4 x 4) mode—press **FUNCTION**, then **Camera 16**.
- One spot monitor output (analog full screen). This output always sequences:
  - Whichever cameras are selected on the spot monitor screen at the specified dwell rate. You cannot select an individual camera during the sequence and it does not display a multi-screen display.
  - Whichever cameras are not disabled on the Covert Setup screen.

To start automatic sequencing mode:

1. Select the cameras you wish to display and the desired display options on the Display Setup screens (**MENU ➤ System Setup ➤ Display Setup ➤ Main Monitor/Spot Monitor**).

Examples

For full sequencing of all 16 cameras, on the main monitor screen enable all cameras in the 1 x 1, 2 x 2, 3 x 3, and 4 x 4 fields.

To sequentially display all 16 cameras in only full screen (1 x 1) followed by quad (4 x 4) mode, disable cameras in the 2 x 2 and 3 x 3 fields.

To sequentially display only certain cameras in full screen, followed by 2 x 2 mode, then in 4 x 4 mode, but not in 3 x 3 mode:

- Select those cameras you wish to display. For example, to display only cameras 5 to12:
  - In the 1 x 1 field, deselect cameras 1 to 4 and 13 to 16.
  - In the 3 x 3 field, deselect 1 and 8.

2. Set the desired dwell time.
3. **Accept** your changes.
4. Exit Program mode. From the Display Setup menu, press **Enter** three times.

5. Press **FUNCTION** and **Camera 1** to start sequencing. Sequencing will loop through the display options you set.

To stop sequencing, press **FUNCTION** and **Camera 1**a second time.

To manually sequence, press **FUNCTION** and either **Camera 1**, **Camera 4**, **Camera 9**, or **Camera 16**, depending on how you wish the video to display.

Example

In Quad (2 x 2) mode, press **FUNCTION** and **Camera 4** once to display cameras 1 to 4. Press **FUNCTION** and **Camera 1**a second time to display cameras 5 to 8. Pressing these buttons a third time displays cameras 9 to 12, and so on.

View current hard drive capacity

At any time you can see how full your drives are and how your hard drive capacity is proportioned. Go to the Disks screen (**MENU ➤ Storage Setup ➤ Disks**).

DISK 0: WDC WD40
42934 Mb disk size
512 bytes per sector
TIME-LAPSE disk usage
(100 % free)
40788 Mb free (out of 40788 Mb)
EVENT MODE disk usage
(96 % free)
2060 Mb free (out of 2148 Mb)
Exit

Hot swap the removable drive

The Hot Swap feature permits you to take out a removable, hot swappable recording device (IDE or SCSI) from the DVMS 1600/800 unit without having to power-down the DVMS.

To activate this option:

1. Press **FUNCTION** and **Camera 2**. This closes the drive and displays the message Remove your hot swap drive now, hit OK after you have inserted a new drive.
2. Power off the front panel drive with the key.
3. Remove the drive.
4. Insert the new drive.
5. Power on the front panel drive with the key.
6. Select **OK**.
7. The message A new drive was found! Do you wish to format it? displays. Select **Cancel** if you do not want to overwrite the contents or **Format** if you want to erase the new drive.

WARNING! Failure to properly activate this option may result in damaged image clips.

Format the archive drive

The Archive drive is not recycled automatically. To reuse a DVD RAM cartridge or removable disk (hot swappable IDE or SCSI drive), you must format the device before recording any video on it and re-format it after it is full. On the Disk screen (**MENU ➤ Storage Setup ➤ Disks**), select the Archive Disk and then press **Normal Format**.

Note A CD R/W drive does not require formatting.

Format the hard drive

See page 3.

Reboot (restart) the DVMS

There is no on/off switch on the DVMS 1600/800 unit. To restart it, disconnect the power cable from either the DVMS 1600/800 unit or from the wall socket. Wait approximately 15 to 20 seconds and power up the DVMS 1600/800 unit by re-connecting the power cable.

Reset passwords

If you need to reset the passwords for the DVMS 1600/800 unit and CANNOT access the Main Menu, contact Technical Support to either:

- Receive a Service Card (a PCMCIA card) that allows you to reset the passwords back to factory defaults.

Note There is a charge for the Service Card.

- Obtain an RA# to return the unit to Silent Witness Customer Service to have them reset it for you.

Upgrade the DVMS firmware

Occasionally you may need to upgrade the DVMS firmware to support the latest feature set. Upgrades are available on the Silent Witness web site at http://www.silentwitness.com. To upgrade the DVMS firmware:

1. Download the DVMS 1600 Software (or DVMS 800 Software) to the PC you will use to connect to the DVMS 1600/800 unit for upgrading.
2. Unzip the downloaded DVMS firmware file (dvms1600_firmware_1*xx*[1]g.zip or dvms 800_firmware_1*xx*g.zip). This extracts a file (16il_*xx*g.bin or 8il_*xx*g.bin) for sending to the DVMS 1600/800 unit.
3. Refer to the upgrade notes on our web site (http://www.silentwitness.com) for instructions on how to send this file to the DVMS 1600/800 unit.

Contact information

Obtain an RA # (Return Authorization Number)	Call Silent Witness Technical Support at 1.800.893.9513
Technical Support	In North America and International, call 1.800.893.9513. In the UK and Europe, call +44 (0) 208.443.8765.
Sales	Call Silent Witness Sales at 1.888.289.2288. For International, call 00800.2020.8080.
Product Spec Sheets and Literature	Available either on the Products section of our web site at http://www.silentwitness.com or call Silent Witness Sales for a hardcopy.

1. *xx* indicates the firmware version no.

SILENT WITNESS®

Securing your world

www.silentwitness.com

Toll free: 1.888.289.2288
International: 00800.2020.8080

Silent Witness Enterprises Ltd.

Sales:	1.888.289.2288	6554 - 176th Street
Tech Service:	1.800.893.9513	Surrey, B.C. V3S 4G5
Phone:	1.604.574.1526	Canada
Fax:	1.604.574.7736	
Email:	swsales@silentwitness.com	

Document 900.0144 Rev 3.00 June 5, 2003

Specifications subject to change without notice.
Imperial conversions are approximate.

Gyyr® and Silent Witness® are registered trademarks of Silent Witness Enterprises Ltd. © 2003 Silent Witness Enterprises Ltd. All rights reserved.
Printed in Canada.